

# **Aeronautics Committee Report to the NASA Advisory Council**

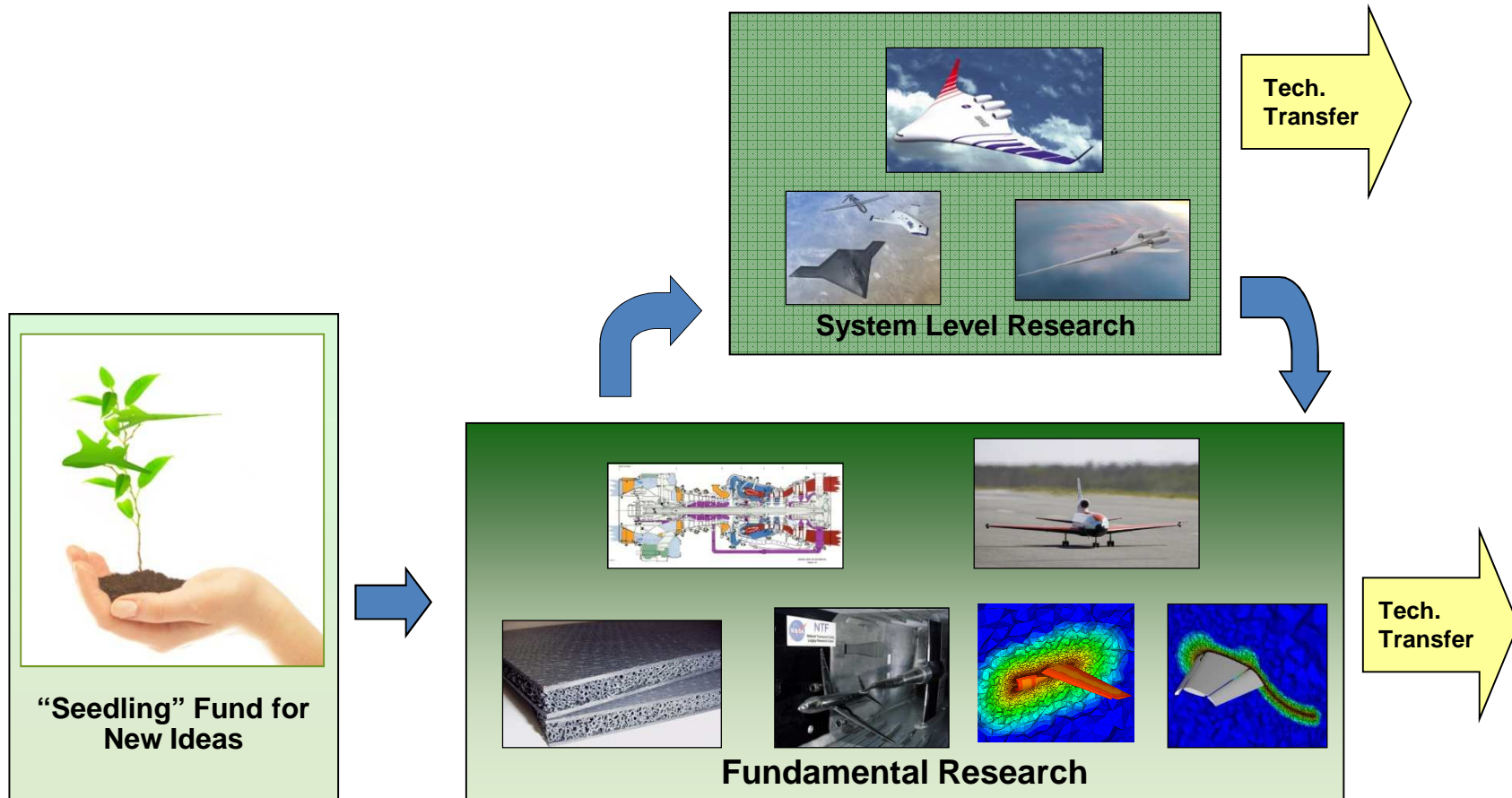
Ms. Marion Blakey (Chair)  
Dr. Ilan Kroo  
Dr. Mark Lewis  
Mr. Preston Henne  
Dr. R. John Hansman  
Mr. Mark Anderson  
Dr. Harry McDonald  
Mr. Paul Adams  
Dr. Ray Colladay (ex-officio)

February 18, 2010

# **Areas of Interest Explored at Current Meeting**

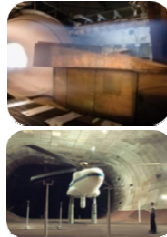
- NASA Aeronautics Overview
- FY2011 President's Budget and new Initiatives
- Technical and programmatic approaches
- International Partnerships Strategy
- Program Review and Reporting Strategy
- Future directions and challenges for NASA Aeronautics

# Aeronautics R & D Strategy



- Foster revolutionary ideas with “Seedling” fund
- More robust tech transfer to industry through innovative fundamental research and further maturation of technologies and concepts in system level research
- Conduct systems research in relevant environments (e.g., flights, full simulations) to realize next set of technological breakthroughs and inspire next generation

# NASA Aeronautics Programs

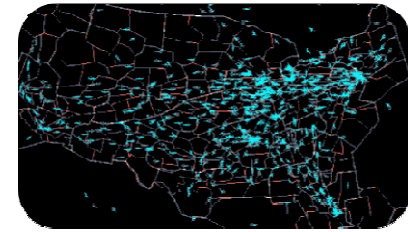


## Fundamental Aeronautics Program

Conduct cutting-edge research that will produce innovative concepts, tools, and technologies to enable revolutionary changes for vehicles that fly in all speed regimes.

## Integrated Systems Research Program

Conduct research at an integrated system-level on promising concepts and technologies and explore/assess/demonstrate the benefits in a relevant environment



## Airspace Systems Program

Directly address the fundamental ATM research needs for NextGen by developing revolutionary concepts, capabilities, and technologies that will enable significant increases in the capacity, efficiency and flexibility of the NAS.



## Aviation Safety Program

Conduct cutting-edge research that will produce innovative concepts, tools, and technologies to improve the intrinsic safety attributes of current and future aircraft.



SVS  
HUD



## Aeronautics Test Program

Preserve and promote the testing capabilities of one of the United States' largest, most versatile and comprehensive set of flight and ground-based research facilities.

# Future Directions for NASA Aeronautics

- Ensure clear distinction in purpose and proper balance in resource between Fundamental Research and Integrated Systems Research
- Ensure strong relevance and tech transfer within all Fundamental Research Programs
- Address most compelling national challenges through Integrated Systems Research
- Strengthen assessment and validation in relevant environments (for example, flight experiments and high fidelity simulations)
- Coordinate with new Space Technology for promoting innovation and leveraging hypersonic research

# **FY 2010 Work Plan**

Review and/or advise on:

1. Goals and progress for mitigating the environmental impact of aviation
2. Effectiveness of addressing NextGen challenges
3. Education to foster growth in aeronautics workforce including public outreach activities and investments
4. Tech transfer from fundamental research programs to Integrated Systems Research Program
5. New FY2011 Program Initiatives (Unmanned Aircraft Systems and Verification & Validation)
6. New research areas that would provide high-value for NASA Aeronautics

# **FY 2010 Work Plan (cont.)**

Additional areas of interest:

1. Domestic and international collaborations
2. Promoting understanding of ARMD's programs, goals and impacts with the public
3. Approach and progress for strategic collaboration with DoD on national testing capabilities and facilities

# Initial Committee Observations

- The Committee endorses the Environmentally Responsible Aviation Project and believes operational and avionics research could strengthen the project.
- The Committee is encouraged to see new Agency focus on Space Technology and is interested in collaborating with Innovation and Technology Committee to ensure coordinated Agency research strategy.
- The Committee feels that NASA needs to consider the proper strategy for engaging non-traditional partnerships (Brazil, Russia, India, China).
- The Committee wishes to maintain awareness of how NASA is measuring progress in its fundamental research programs.



# Plans for Next Meeting

- WebEx meeting for detailed programmatic briefings (Date: TBD, NLT 4/21/10)
- Face-to-face Committee Meeting at Langley Research Center on 4/22-23.
  - Brief on UAS planning
  - Brief on V&V planning
  - Aeronautics Test Program Strategic Plan
  - Tours of LaRC facilities
  - FACA briefing